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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,761	09/27/2001	Tzahi Arazi	1686/4	1790

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EXAMINER

WINKLER, ULRIKE

ART UNIT	PAPER NUMBER
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1648

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/963,761	<b>Applicant(s)</b> ARAZI ET AL.	
	<b>Examiner</b> Ulrike Winkler	<b>Art Unit</b> 1648	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on August 18, 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 19-35 is/are pending in the application.  
     4a) Of the above claim(s) 5, 23-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-15 and 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The Amendment filed August 18, 2004 in response to the Office Action of April 19, 2004 is acknowledged and has been entered. Claims 1-4, 6-15 and 19-22 are pending and are currently being examined. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

#### *Drawings*

The drawings are objected to, please see Notice of Draftsperson's Review attached to the Election/Restriction requirement of Paper No. 9. Correction is required.

#### *Claim Rejections - 35 USC § 112*

The rejection of claims 1, 3, 10 and 11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention **is withdrawn** in view of Applicants amendments to the claims.

The rejection of claims 1, 7 and 8 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention **is maintained** for reasons of record. Claim 8 contains the limitation that "modified by deletion of at least one amino acid residue." Deleting one amino acid residue is clear. How many more amino acids may be deleted and still maintain the character of being a potyvirus amino terminal domain is unclear? Since the claim [claim 8]

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encompasses structures that do not comprise any potyvirus amino terminal domain it is not clear what is encompassed by the claim. Claim 1 requires that the structure comprises “the amino terminal of a potyvirus coat protein” yet claim 8 allows for the deletion of all amino acids from the amino terminus. Applicants’ entire argument is the amino-terminus [a.k.a. = N-terminus, 5'-terminus] is not synonymous with “amino-terminal domain.” This argument is not persuasive based on the usage of amino-terminus, amino-terminal and amino-terminal domain in the specification and in the prior art where the terms are used interchangeably.

The rejection of claims 1, 3 and 9 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention **is maintained**. Specifically, claim 9 contains the limitation that “influences a biological activity.” What biological activity is influenced? Is the biological activity of the virus influenced? If so what specific biological activity is envisioned? Is the biological activity of the plant influenced? If so what changes need to be observed in order to meet the requirement that the biological activity is influenced? The meets and bounds of the limitation “influences a biological activity” in the claim is not clear.

#### ***Claim Rejections - 35 USC § 102***

The rejection of claims 1, 3, 6-13, 15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Fernandez-Fernandez et al. (Federation of European Biochemical Societies, 1998) **is maintained** for reason of record.

Applicant's arguments filed August 18, 2004 have been fully considered but they are not persuasive. Applicants entire argument is the amino-terminus [N-terminus, 5'-terminus] is not synonymous with "amino-terminal domain." This argument is not persuasive based on the usage of amino-terminus, amino-terminal and amino-terminal domain in the specification and in the prior art where the terms are used interchangeably.

As defined in the specification and in the claims themselves, "the alternate amino-terminus may arise, for example, from an insertion, a replacement or a deletion of at least one amino acid residue from the known amino-terminus." The amino-terminus based on the usage in the specification and the claims refers to more than just the first amino acid in a protein. The specification uses the term amino-terminus to be equivalent to the amino-terminal domain. Therefore, Applicants' argument that amino-terminus and amino-terminal domain are not synonymous is not persuasive.

Applicants' have attached Appendix A to the response of August 18, 2004. A review of appendix A indicates that the N-terminal domain of potyviruses vary considerably. "The coat proteins from distinct potyviruses vary considerably in size ranging from 251 amino acids...to 332 amino acids....these size differences are largely due to variation in the N-terminal end of the coat protein." The reference also indicates that the true N-terminus is elusive and that a potyvirus may have more than one N-terminus due to differential cleavage. What N-terminus is contemplated in the instant claims is therefore not clear as the virus can have more than one N-terminus. The Atreya et al. (PNAS, Vol. 90, pages 11919-11923 1993) reference looks at mutation in the 5'terminal portion to see how sequences within the 5'terminus affect virus properties. From the Atreya et al. reference it is clear that the ordinary artisan would consider

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the 5' terminus [amino-terminus] to be more than the first amino acid in a protein. "Deletion and insertion mutagenesis in the 5' terminus [= the amino terminus] of the HC-Pro gene suggest that this RNA domain may be an essential element for TVMV infectivity" (Atreya et al. see abstract lines 9-12). In Varrelmann et al. (Journal of Virology, 2000) the N-terminus or C-terminus contemplates more than just the first or last amino acid in a peptide chain (see figure 1).

Therefore, the common usage in the art for the term N-terminus contemplates more than just the first amino acid in a chain and usually refers to a region in the protein that is at the beginning of the peptide chain.

In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the extreme end of the N-terminus, see response page 8, lines 11-12, and specification page 5 line 10) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, the instant invention is anticipated by Fernandez-Fernandez et al.

The rejection of claims 1, 2, 3, 6-9, 15 and 22 under 35 U.S.C. 102(a) as being anticipated by Verrelmann et al. (Journal of Virology, 2000) is **maintained** for reasons of record.

Applicant's arguments filed August 18, 2004 have been fully considered but they are not persuasive. Applicants' whole argument is the amino-terminus [N-terminus, 5'-terminus] is not synonymous with "amino-terminal domain." This argument is not persuasive for the reasons set out above. Based on the usage of amino-terminus, amino-terminal and amino-terminal domain

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in the specification and in the prior art more than the first amino acid in a chain is contemplated as being part of the amino-terminus. Therefore, the instant rejection is maintained as being anticipated by Verrelmann et al.

### ***Claim Rejections - 35 USC § 103***

The rejection of claims 1, 3, 4, 6-15 and 19-22 are rejected under 35 U.S.C. 103(a) as being obvious over Fernandez-Fernandez et al. (Federation of European Biochemical Societies, 1998) in view of Fitchen et al. (U.S. Pat. No. 5,955,647) and Atreya et al. (Proceedings of the National Academy of Sciences, 1993) **is maintained** for reason of record.

Applicant's arguments filed August 18, 2004 have been fully considered but they are not persuasive. Applicants' whole argument is the amino-terminus [N-terminus, 5'-terminus] is not synonymous with "amino-terminal domain." This argument is not persuasive for the reasons set out above. Based on the usage of amino-terminus, amino-terminal and amino-terminal domain in the specification and in the prior art more than the first amino acid in a chain is contemplated as being part of the amino-terminus. Therefore, the instant rejection is maintained as being obvious over Fernandez-Fernandez et al. in view of Fitchen et al. and Atreya et al.

### ***Conclusion***

No claims allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG (November 15, 1989). The Group 1600 Official Fax number is: (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center representative whose telephone number is (571)-272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ulrike Winkler, Ph.D. whose telephone number is 571-272-0912. The examiner can normally be reached M-F, 8:30 am - 5 pm. The examiner can also be reached via email [[ulrike.winkler@uspto.gov](mailto:ulrike.winkler@uspto.gov)].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached at 571-272-0902.



ULRIKE WINKLER, PH.D.  
PRIMARY EXAMINER

2/7/05